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Guest editorial

Xenotransplantation

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The Government Advisory Group on Xenotransplantation was set up under the chairmanship of Professor Ian Kennedy to examine the ethical acceptability of xenotransplantation and to make recommendations.[1] A preliminary question arises as to the sense of "ethics" involved. For some commentators "ethics" is to be distinguished from practicalities. Assuming this approach to ethics some scientists and journalists implied that once we have settled the question of animal suffering (or even before we have done so) xenotransplantation has few ethical problems. The problems of xenotransplantation are then described as "practical" or "scientific": there is a chance that it might unleash dangerous pathogens which could destroy thousands of people. A minor practical problem! The advisory group took a different view: that an ethical decision is an all-things-considered decision resultant from the practicalities such as the science, the economics, and the extent to which it might relieve the shortage of donor organs.

Granted this view of ethics what principles governed the discussion? The group saw its role as making recommendations on an important issue of public policy. The principle behind such public policy discussion is utility. How do we evaluate the complex ethical questions of harm and benefit? It might be said that justice has a part to play in public policy recommendations. It has, but only after it has been decided that a policy brings net benefits. Considerations of justice might then influence decisions as to who should be offered the benefits of the programme; and finally considerations of consent would be relevant at the level of individual patients. But the main concerns of the group centred on the balancing of harms and benefits.

If xenografting were to be successful the benefits would be a contribution to relieving the shortfall in human organs – hearts, lungs, kidneys, livers and other tissues – for transplant. It is well known that the waiting lists are long and this no doubt was the major motivating factor in the development of the xenograft research programme.

We can classify the harms in two ways: actual harms and possible harms. One of the actual harms I shall note but not discuss: the cost, which would obviously be considerable in view of the process of producing a sterile transgenic pig and the subsequent monitoring of the patient. What opportunities for other treatments are we willing to give up in order to pay for xenotransplants? I shall say more about the second actual cost: the animal suffering involved.

It is possible to think of animals as disposable commodities. If we go down that route then the cost of animal suffering can be discounted. There are many contemporary practices – in factory farming, the veal industry etc – which exemplify *de facto* widespread public acceptance of that position. But it is not a position that is easy to justify. It is also possible to think of animals as possessing inalienable rights. If we go down that very different route then a great deal besides xenotransplantation is ruled out. The group took a middle road: that animals do have some rights, to have their suffering minimised and their welfare safeguarded, but these rights must be weighed against benefits to humans. The group reached the view, like the Nuffield Council[2] before it, that the possible benefits to humans would outweigh the animal suffering. They therefore agreed that, at least in this respect (although not in others), xenotransplantation was ethically acceptable.

In this respect, on further reflection, I should like to disagree with the group. I do not endorse the view that animals have inalienable rights, but it now seems to me that the amount of animal suffering involved in the process of creating transgenic pigs (and remember that the research programme also involves primates) is unacceptably large compared with the alleged benefits for some human beings. Some philosophers claim that human beings have what they term "a higher moral status" than animals, and from this premise they conclude that human suffering must count for more in any calculus than animal suffering. I am not sure what the glib phrase "higher moral status" means, but presumably those with a "higher moral status" would have greater capacities for altruism than those without it. They therefore ought to know that it is wrong to inflict needless suffering on lesser creatures to benefit themselves, their race or their species. But this is precisely what is being proposed. I have more sympathy

with the "animals are commodities" position: "Forget ethics; we can do this, so we will." It could be maintained that I beg a question when I say that the animal suffering is "needless", for it benefits humans. But a great deal more could be done to improve the supply of human organs and mechanical substitutes, so the term "needless" can be justified.

I have argued against the use of animals for transplant purposes on the largely utilitarian basis of weighing actual harms and benefits. But, before touching on possible harms, I would now like to refer to two other kinds of consideration – "argument" is perhaps too strong a word. One of these the group did discuss but did not make central, and the other is linked to it. They represent considerations which philosophers tend to dismiss, but yet they are present in the doubts which many non-sophisticated people have over xenotransplantation (and other technologies).

A way in to the first of these non-utilitarian considerations might be to examine the frequently used comparison between eating pigs and using their organs for transplant. It has often been said that the pig's right to life is outweighed by the benefits which its carcass will bring to human beings as food. So why do the same considerations not apply to transplanting its organs?

There is a non-utilitarian difficulty with this simple argument which is best appreciated by using the (admittedly ambiguous) terms "natural" and "unnatural". It can be argued that whereas the eating of animal flesh may or may not be ethically right, it is "natural" in the sense that many other animal species in fact do it and (as has been claimed by some) human beings are biologically carnivorous or at least omnivorous. On the other hand, the transplant of animal tissue into human beings is "unnatural" in the sense that it is a human artefact. This of course is not enough to show that it is wrong – perhaps every medical intervention is in that sense "unnatural". It does, however, mean that the reassuring analogy between eating animals and using them for transplantation is misleading.

This consideration of xenotransplantation as '"unnatural" is difficult to assess. Those who are impressed by it will support the use of the term "unnatural" by saying that the scientists are "playing God". The same of course has been said of the introduction of many life-saving therapies, and perhaps our tendency to use the word "unnatural" here simply reflects an understandable fear of the unknown. But it is also possible to be too sophisticated and too much impressed by science. What is being proposed is (a) inserting the genes of one species into those of another, and (b) transplanting organs and tissues so treated into the human species. Such a process seems profoundly different from previous medical interventions. Hence, the use of the term "unnatural" is difficult to repress. Furthermore, it is clear that "unnatural" may sometimes also mean "wrong". The two are not, however, inevitably related. It may be that before something unnatural can be found to be ethically unacceptable, it also has to have predominantly harmful consequences when set on a scale of benefits and harms. Thus, any conclusion as to whether xenotransplantation is or is not "natural" will not prevent the need to examine the various arguments which suggest that xenotransplantation may bring more harm than good.

The second consideration is in a sense a development of the first. It can be approached by referring to an ambivalence in medical (and other) technology. We are familiar with the contradiction that medical technology can liberate us from the bondage of disease, but can also enslave by keeping us alive with a poor quality of life. I do not stress that contradiction (although it may not be irrelevant). Rather I want to note an ambivalence within the liberating power of medical technology. This liberation can be simply the removal of the constraints of disease and disability. But it can easily pass into delusions of empowerment. The idea is that mankind will, through medical science, recreate itself – "Ye shall be as gods". This idea is most obviously present in the wilder aspirations of gene therapy and gene enhancement, but it may be present also in the idea that it is legitimate for human beings to cross species barriers in a massive way in order to recreate a human being. Is there a *hubris* in this?

There is some substance to such a fear, as emerges when we move to discussion of possible harms. The most striking of these is that xenotransplantation may introduce dangerous pathogens into the human race. Scientific reassurance (not that that was forthcoming from the best contemporary scientific evidence) is not likely to be convincing in this context. We have heard it all before, and must now live with the consequences of the nuclear industry, BSE and AIDS. Xenotransplantation may be a case in which we can still say "no" to an alleged therapy, much hyped by some large pharmaceutical companies. There are after all other routes which we can follow, to develop mechanical organs and also improve the rate of human organ donation.

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References

1 Advisory Group on the Ethics of Xenotransplantation. *Report: Animal tissue into humans*. London: HMSO, 1997.
2 Nuffield Council on Bioethics. *Animal-to-human transplants*. London: Nuffield Council on Bioethics, 1996.